

Template for suggesting changes to miniseed specification

Commenting on document version #	M=modification, N= add new section, D=Delete existing section	Add
Topic		Fixed point data sample encoding
Type of Action (M=modification, N= add new section, D=Delete)		Add
Current Wording from document	Applies to M or D	<p>Change: Include a fixed-point, constant resolution data sample encoding and define a representation</p> <p>Suggestion: Evaluate the need for this and determine a representation. Two options:</p> <ol style="list-style-type: none"> <li>1) Adopt Q for a number format, is binary format defined?</li> <li>2) Define an encoding as a single resolution value followed by integer data. Fixed-point values are restored by shifting the decimal place according to the resolution value.</li> </ol>
New wording	Applies to M or N	The suggestion is to define, for example, an IEEE float scaling factor in the header or in some optional embedded structure, to be applied to the compressed integer time series to follow, allowing for the representation of data with arbitrary scaling and up to 32-bit resolution of the effective "mantissa".
Rationale		The compression methods commonly in use, e.g. Steim1, Steim2, and others refer to an original signed 32-bit integer time series. With the addition of one float scaling factor, such a compressed series can represent any value with full 32-bit resolution of the mantissa. This representation would be a good application for an optional "scaling blockette". Perhaps the proposal to do away with <u>all</u> blockettes is pre-mature? Addition of a scaling values allows infrastructure accomodating any of the existing compression methods to support arbitrarily scaled data with minimal changes.
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